

REMARKS/ARGUMENTS

Favorable reconsideration of this application in light of the following discussion is respectfully requested.

Claims 1-12 and 27 are now pending in this application. Claims 14-23 are herein canceled without prejudice. Claims 13 and 24-26 were previously canceled. Claim 1 is herein amended. Support for this amendment is found at least in the specification at page 25, lines 1 and 2. Claim 27 is added. Support for new claim 27 is found at least in the specification at page 24, lines 6-8. No new matter is added.

In the outstanding Office Action, claims 1, 2, 4-7, and 12 were rejected under 35 U.S.C. § 102(b) as anticipated by Caillat, WO 02/088300 (English equivalent U.S. 2004/0175708). Claims 1-7 and 12 were rejected under 35 U.S.C. § 102(b) as anticipated by Montgomery, U.S. Patent No. 6,280,595. Claims 1-12 were rejected under 35 U.S.C. § 103(a) as obvious over Caillat, in view of Montgomery and Segev, U.S. Patent No. 5,843,650. Claims 1-12 were rejected under 35 U.S.C. § 103(a) as obvious over Montgomery in view of Segev.

Claims 1, 2, 4-7, and 12 were rejected as anticipated by Caillat. In response, claim 1 is amended. As so amended, claim 1 is directed to a device comprising a support comprising a surface. The surface has an attachment zone that is capable of being functionalized with a probe, which can be bound to a target so as to attach it. The device also has a working electrode, with a counterelectrode for the working electrode. The working electrode and counterelectrode are placed on the support in the vicinity of the attachment zone. The working electrode borders or surrounds the attachment zone. The device has a space separating the attachment zone and the working electrode. The device also has a means for applying a given electric current or a given potential to the working electrode so as to cause a local variation in pH in the region of the attachment zone when the attachment zone and the

electrodes are immersed in an aqueous solution. All of the remaining claims depend from claim 1 and include all of the claim 1 limitations.

Caillat differs from the present invention. Caillat discloses a miniature device for separating and isolating biological objects. The Caillat device has at least one electrode integrated into it, along with at least a second electrode integrated into or external to the device and a matrix of reaction microcuvettes.¹ The bottom of these microcuvettes constitutes a reception zone the surface of which can be covered by the surface of attachment of the biological object to be attached.² Thus, the bottom of the microcuvettes in Caillat corresponds to the attachment zone of the present invention. Further, in an embodiment of the Caillat device, the first electrode (which corresponds to the working electrode of the present invention) constitutes the bottom of the microcuvettes.³ Indeed, the first electrode is the attachment zone in the Caillat embodiment represented at Figs. 1-5.

According to another embodiment of the Caillat device, the bottom of the microcuvettes (i.e. the attachment zone) consists of a layer made of glass, plastic or silicon.⁴ This embodiment, seen in Fig. 6 and disclosed at paragraph [0100], teaches a first electrode (corresponding to the working electrode) separated from the support by a double layer comprising the layer of glass or of silicon and the layer of isolating material. The working electrode is not on the support.

Anticipation requires the disclosure in a single prior art reference of each element in the claim arranged as in the claim. *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 730 f.2d 1452, 221 USPQ 481, 485 (Fed. Cir. 1984). Clearly, the claimed invention comprises a device in which the attachment zone and the working electrode are distinct zones, separated by a space, located on the on the support. This separation allows

¹ Caillat, ¶ 0024.

² *Id.*

³ *Id.* at ¶ 0043.

⁴ *Id.* at ¶ 0044.

better control of the pH at the attachment zone. Indeed, on the surface of the electrode generating the pH change (working zone), the gradient of pH is very important and difficult to control. When this zone is remote from the working zone, the gradient of pH is easier to control. When the attachment zone and the working zone are not so separated, there is a greater risk of deterioration of functions and links between the substrate and the probes due to the current or potential on the working electrode.

As noted above, Caillat does not teach a device in which the attachment zone and the working electrode are separated by a space. Indeed, in at least one embodiment of Caillat, the working electrode is not even on the support, much less separated from the attachment on the support by a space. Failing to teach all of the elements in claim 1, as arranged in the claim, Caillat cannot anticipate claim 1 nor any of its dependent claims. Applicants respectfully request withdrawal of these rejections.

Claims 1-7 and 12 were also rejected as anticipated by Montgomery. Like Caillat, Montgomery cannot anticipate claim 1. In the Montgomery device, the attachment zone is the working electrode. Indeed, the working electrode in Montgomery is covered by a membrane containing reactive moieties.⁵ Once the method of Montgomery has been implemented, the molecules attached to said reactive moieties are present at the surface of the working electrode.⁶ Thus, Montgomery does not disclose a device in which the working electrode borders or surrounds the attachment zone and in which the working electrode and the attachment zone are separated by a space. Failing to teach all of the elements in claim 1, as arranged in the claim, Montgomery cannot anticipate claim 1 nor any of its dependent claims. Applicants respectfully request withdrawal of these rejections.

⁵ Montgomery, col. 27, lines 27-28; col. 33, lines 19-25; col. 36, lines 37-41.

⁶ *Id.* at col. 28, lines 24-28; col. 34, lines 38-43; col. 37, lines 51-56.

Claims 1-12 were rejected as obvious over Caillat, in view of Montgomery and Segev. Claims 1-12 were rejected as obvious over Montgomery in view of Segev. As amended, claim 1 and its dependent claims are not obvious over either of the recited combinations.

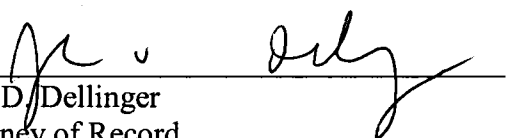
As noted above, both Caillat and Montgomery fail to anticipate the claimed invention because they do not teach, at least, a device in which the working electrode borders or surrounds the attachment zone and in which the working electrode and the attachment zone are separated by a space. Segev does not remedy this deficiency.

Segev discloses a method for amplifying and detecting single or double-stranded target nucleic acid molecules or a minute sequence alteration in a test sample. Segev also discloses a kit for implementing this method. Segev does not disclose a device in which the working electrode borders or surrounds the attachment zone and in which the working electrode and the attachment zone are separated by a space. One skilled in the art could not combine the recited references to reach the claimed invention. Accordingly, Applicants respectfully request withdrawal of these rejections.

In light of the above discussion, the present application is believed to be in condition for allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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